What is claimed is:

WO 2005/068445

1. A compound of formula

Het
$$A_1$$
 A_2 A_3 A_4 A_4

wherein

Het is non-aromatic heterocyclyl that does not contain cumulative double bonds and that has 5 or 6 ring members of which the linking ring member, by way of which Het is linked, by means of a first single bond, to the remainder of the compound of formula I, is either a nitrogen atom that carries two further single bonds which lead to the two ring members of Het directly adjacent to that nitrogen atom, or a carbon atom that carries a further single bond and a double bond which lead to the two ring members of Het directly adjacent to that carbon atom, and the remaining 4 or 5 ring members of Het are, independently of one another, selected from the group consisting of the ring members $-C(R_i)(R_{ii})$ -, -C(=O)-, -C(=S)-, -O-, -S-, $-N(R_{iii})$ -, $-C(R_{iv})$ = and -N=, wherein (A) of the 5 or 6 ring members of Het, from 1 up to and including 4 ring members, independently of one another, each contributes a hetero atom to the basic ring structure of Het consisting of 5 or 6 ring atoms, (B) two directly adjacent ring members of Het are not both -O-, and (C), when the mentioned linking ring member of Het is a nitrogen atom, either (i) at least one ring member of the mentioned remaining 4 or 5 ring members of Het is -N= or (ii) at least one of the 2 or 3 ring members of Het that are neither the mentioned linking ring member of Het nor its two directly adjacent ring members is -C(=O)- or -C(=S)- or (iii) at least three ring members of the mentioned remaining 4 or 5 ring members of Het are each independently of the others -C(R_{iv})= or (iv) at least two ring members of the mentioned remaining 4 or 5 ring members of Het are each independently of the other(s) -O-, -S- or -N(Riii)- and, when the mentioned linking ring member of Het is a carbon atom, either (v) the mentioned double bond starting from that carbon atom leads to a nitrogen atom or (vi) the ring member of Het bonded to the mentioned further single bond starting from that carbon atom is -C(=O)- or -C(=S)-;

- 31 -

 R_i and R_{ii} are each independently of the other hydrogen, halogen, C_1 - C_6 alkyl, halo- C_1 - C_6 alkyl, C_1 - C_6 alkoxy, halo- C_1 - C_6 alkoxy, C_2 - C_6 alkenyl, C_2 - C_6 alkyl; C_1 - C_6 alkyl;

 R_{iii} is C_1 - C_6 alkyl, halo- C_1 - C_6 alkyl, C_1 - C_6 alkoxy, halo- C_1 - C_6 alkoxy, C_2 - C_6 alkoxy- C_1 - C_6 alkoxy- C_1 - C_6 alkyl;

 R_{iv} is hydrogen, halogen, C_1 - C_6 alkyl, halo- C_1 - C_6 alkyl, C_1 - C_6 alkoxy, halo- C_1 - C_6 alkoxy, C_2 - C_6 alkynyl or C_1 - C_6 alkoxy- C_1 - C_6 alkyl;

 A_1 , A_2 and A_3 are each independently of the others a bond or a C_1 - C_6 alkylene bridge which is unsubstituted or substituted from one to six times by, each independently of the other(s), C_3 - C_8 cycloalkyl, C_3 - C_8 cycloalkyl- C_1 - C_6 alkyl or halo- C_1 - C_3 alkyl;

 A_4 is a C_1 - C_6 alkylene bridge which is unsubstituted or substituted from one to six times by, each independently of the other(s), C_3 - C_8 cycloalkyl, C_3 - C_8 cycloalkyl- C_1 - C_6 alkyl or halo- C_1 - C_3 alkyl;

D is CH or N;

W is O, NR₅, S, S(=O), S(=O)₂, -C(=O)-O-, -O-C(=O)-, -C(=O)-NR₆- or -NR₆-C(=O)-;

T is a bond, O, NH, NR₅, S, S(=O), S(=O)₂, -C(=O)-O-, -O-C(=O)-, -C(=O)-NR₆- or -NR₆-C(=O)-;

Q is O, NR₅, S, S(=O) or S(=O)₂;

Y is O, NR₅, S, S(=0) or S(=0)₂;

 X_1 and X_2 are each independently of the other fluorine, chlorine or bromine;

 R_1 and R_2 are each independently of the other H, halogen, CN, nitro, C_1 - C_6 alkyl, halo- C_1 - C_6 alkyl, C_1 - C_6 alkylcarbonyl, C_2 - C_6 alkenyl, halo- C_2 - C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_6 alkoxy, halo- C_1 - C_6 alkoxy, C_2 - C_6 alkenyloxy, halo- C_2 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, C_1 - C_6 alkoxy-carbonyl or halo- C_3 - C_6 alkynyloxy;

 R_3 is halogen, CN, nitro, C_1 - C_6 alkyl, halo- C_1 - C_6 alkyl, C_1 - C_6 alkylcarbonyl, C_2 - C_6 alkenyl, halo- C_2 - C_6 alkenyl, C_2 - C_6 alkenyl, C_1 - C_6 alkoxy, halo- C_1 - C_6 alkoxy, C_2 - C_6 alkenyloxy, halo- C_2 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, C_1 - C_6 alkoxycarbonyl or halo- C_3 - C_6 alkynyloxy, the two R_3 substituents being identical or different when m is 2;

 R_4 is halogen, CN, nitro, C_1 - C_6 alkyl, halo- C_1 - C_6 alkyl, C_1 - C_6 alkylcarbonyl, C_2 - C_6 alkenyl, halo- C_2 - C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_6 alkoxy, halo- C_1 - C_6 alkoxy, C_2 - C_6 alkenyloxy, halo-

PCT/EP2005/000094

C₂-C₆alkenyloxy, C₃-C₆alkynyloxy, C₁-C₆alkoxycarbonyl or halo-C₃-C₆alkynyloxy, the R₄ substituents being identical or different when k is greater than 1;

- R_5 is H, C_1 - C_6 alkyl, halo- C_1 - C_3 alkyl, halo- C_1 - C_3 alkylcarbonyl, C_1 - C_6 alkoxyalkyl, C_1 - C_6 alkylcarbonyl or C_3 - C_8 cycloalkyl;
- R_6 is H, C_1 - C_6 alkyl, halo- C_1 - C_3 alkyl, halo- C_1 - C_3 alkylcarbonyl, C_1 - C_6 alkoxyalkyl, C_1 - C_6 alkylcarbonyl or C_3 - C_8 cycloalkyl;
 - k is 0, 1, 2 or 3 when D is N or is 0, 1, 2, 3 or 4 when D is CH; and m is 0, 1 or 2,

and, where applicable, possible E/Z isomers, mixtures of E/Z isomers and/or tautomers thereof, in each case in free form or in salt form.

- 2. A compound according to claim 1 in free form.
- 3. A compound according to any one of claims 1 to 2, wherein X_1 and X_2 are chlorine or bromine.
 - 4. A compound according to any one of claims 1 to 3 wherein A₁ is a bond.
- 5. A compound according to any one of claims 1 to 4 wherein the group A_2 -T- A_3 is a bond.
- 6. A compound according to any one of claims 1 to 5 wherein W is O, -C(=O)O- or -C(=O)NH-.
 - 7. A compound according to any one of claims 1 to 6 wherein A_4 is a straight-chain alkylene bridge.
 - 8. A compound according to any one of claims 1 to 7 wherein Q is oxygen.
 - 9. A compound according to any one of claims 1 to 8 wherein Y is oxygen.
- 10. A compound according to any one of claims 1 to 9 wherein R_1 and R_2 are bromine or chlorine.
 - 11. A compound according any one of claims 1 to 10 wherein m is 0.
- 12. A compound according to any one of claims 1 to 11 wherein R_4 is halogen and k is 2 or 0.
 - 13. A compound according to any one of claims 1 to 12 wherein D is CH.

WO 2005/068445 PCT/EP2005/000094

- 33 -

- 14. A pesticidal composition comprising as active ingredient at least one compound according to any one of claims 1 to 13, in free form or in agrochemically usable salt form, and at least one adjuvant.
- 15. A process for the preparation of a composition as described in claim 14, which comprises intimately mixing the active ingredient with the adjuvants.
- 16. A method of controlling pests, which comprises applying a composition as described in claim 14 to the pests or to the locus thereof.